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CONFERENCE
summer camp for geeks
2013

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PACKING SKILLS TO BE A DEVOPS

ThatConference - August 14th - Wisconsin Dells (USA)

OLE MICHAELIS

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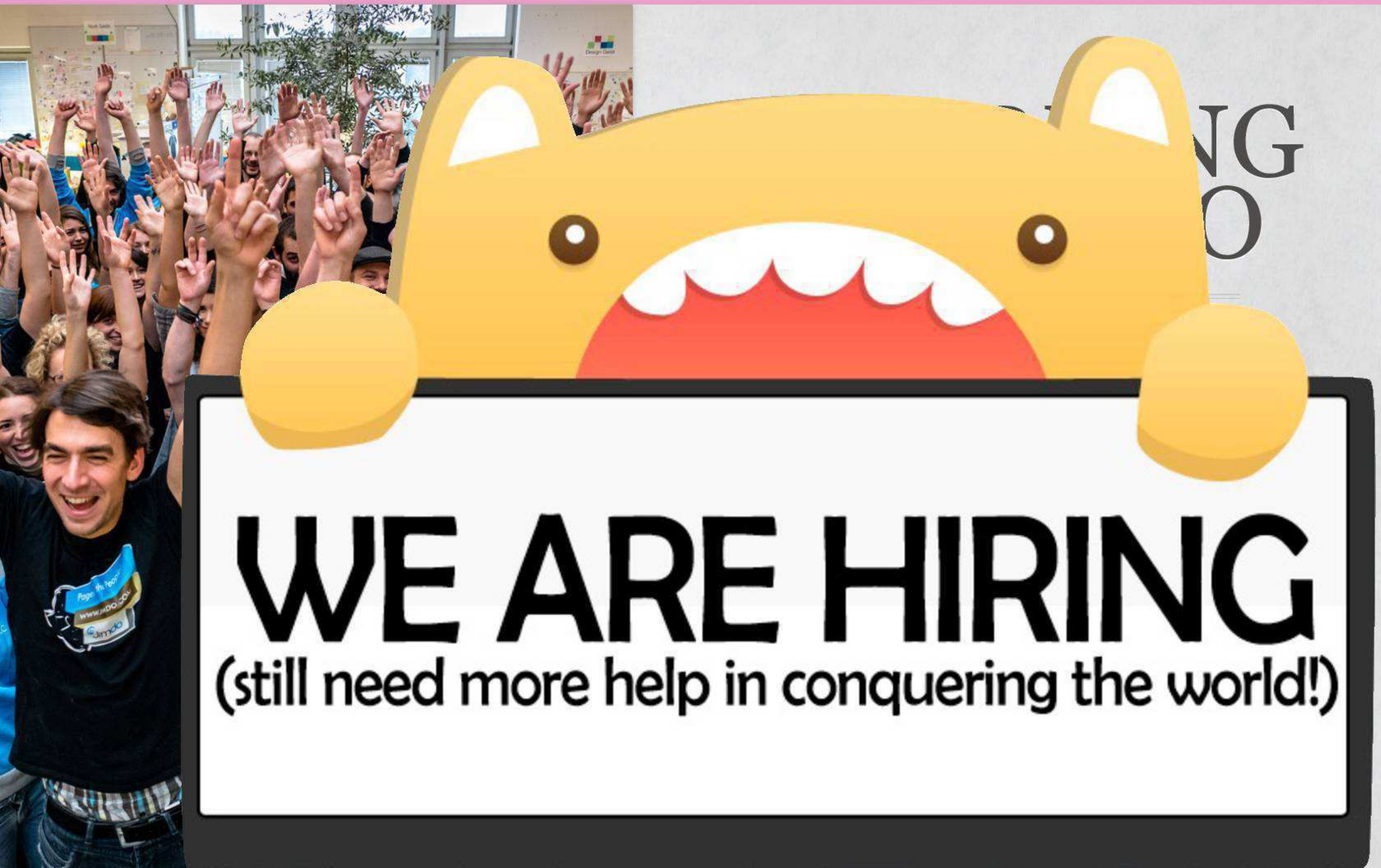
WORKING @JIMDO

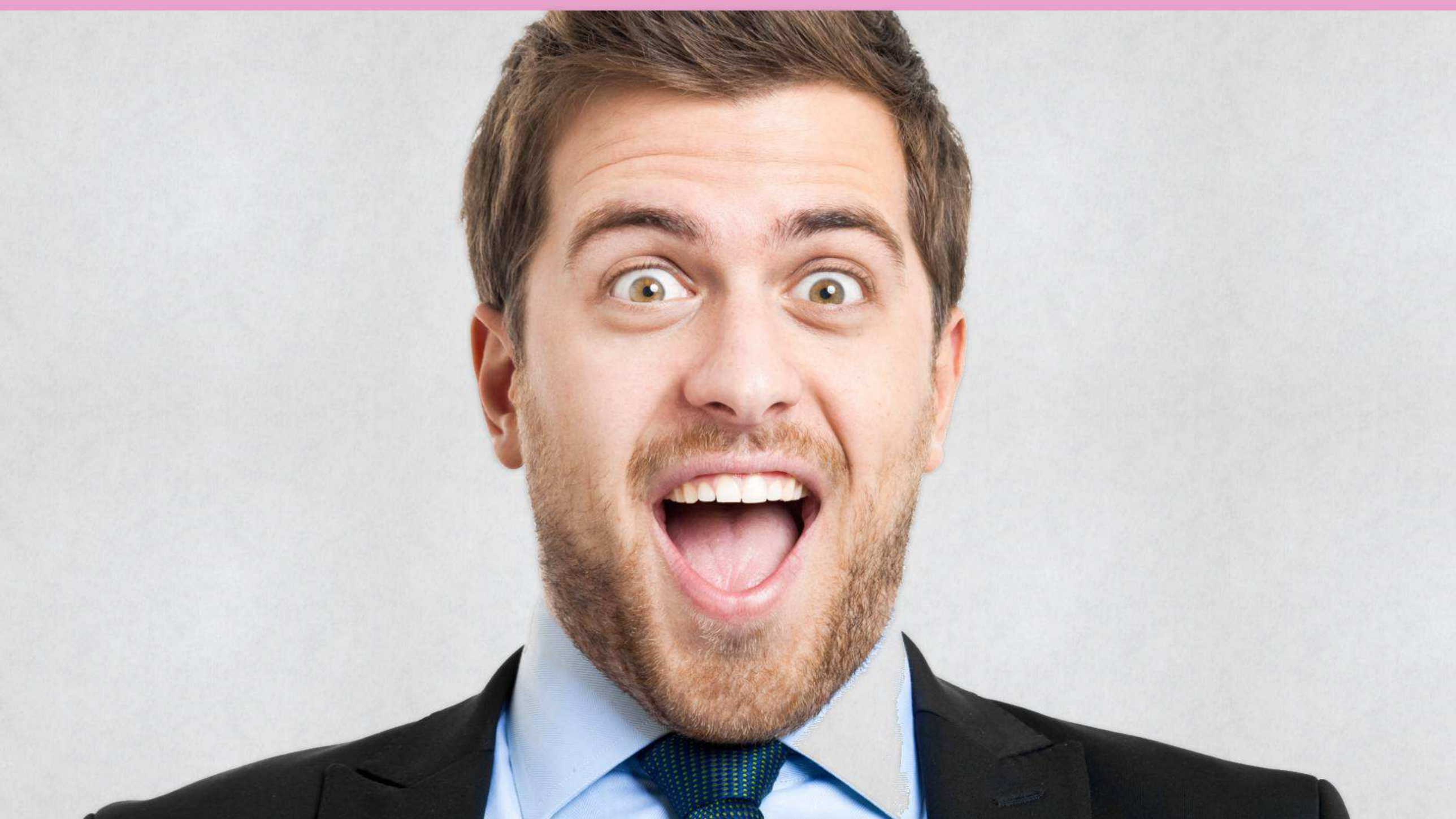
"Open Source Rockstar"


WE ARE HIRING
(still need more help in conquering the world!)

WORKING @JIMDO

"Open Source Rockstar"

MY DEVOPS STORY




36000 + 75000
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65600 + 850000
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A
Y
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5600 + 5000
6000 + 5000
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456.000
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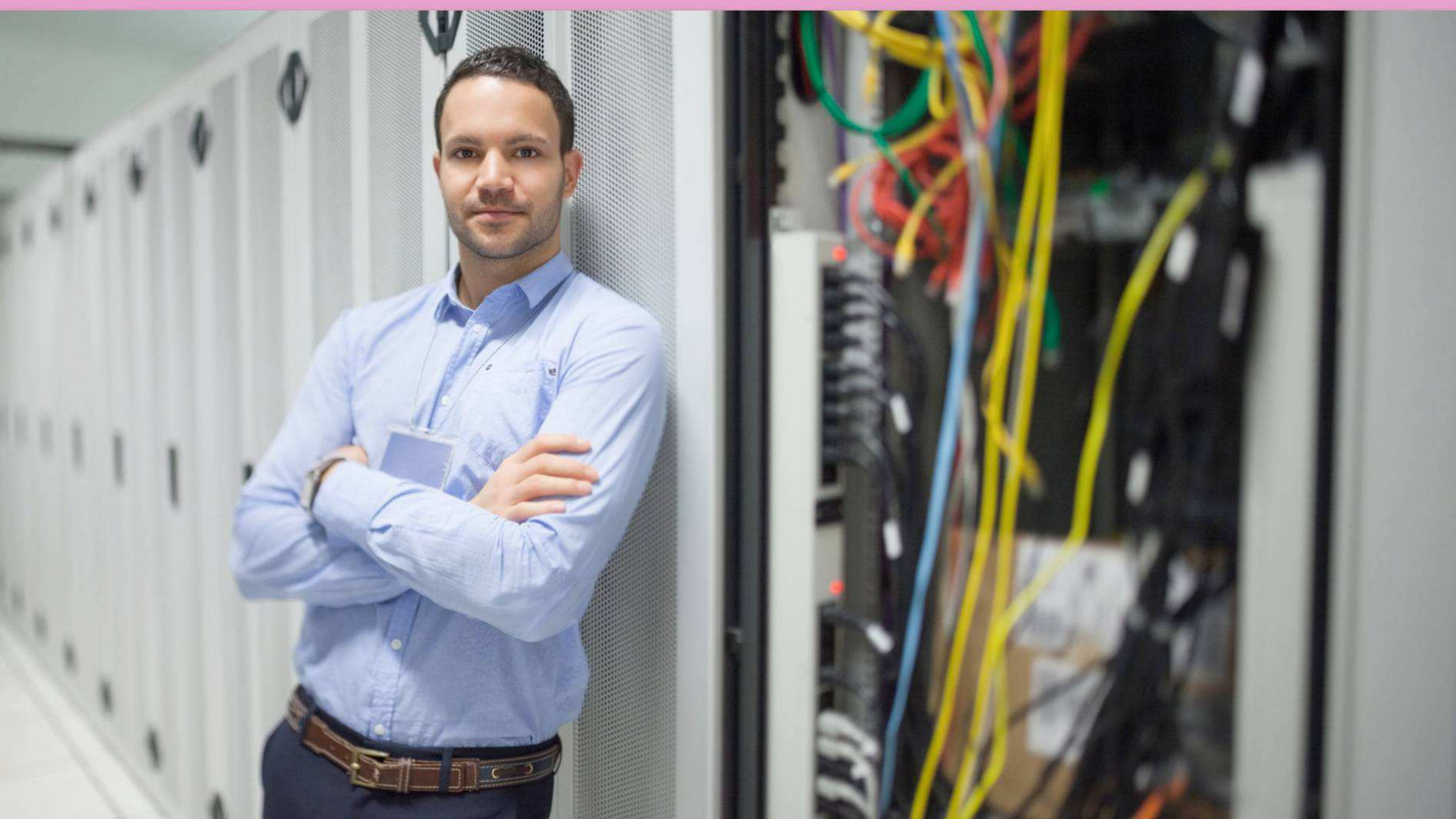
56000
75000
8000
45600 + 7500
62000 + 62100
45*
56000 Y
AC
G
62000 + 73000 + 45000
45% de
48000 + 30
(45.000.000 + 76.000)
150.000 €/esa



WHY IS IT GOOD?

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- ✔ dedicated technical-debt team

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- ✔ making others faster

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- ✔ making others faster
- ✔ cross-functional

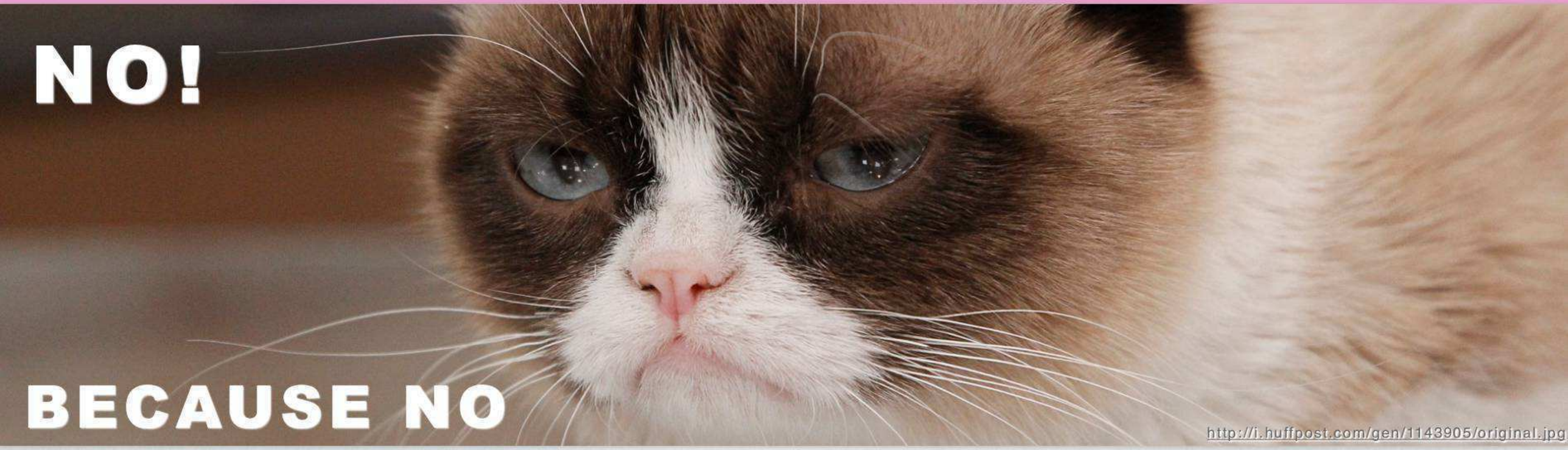
WHY IS IT GOOD?

- dedicated technical-debt team
- making others faster
- cross-functional
- full-stack engineering

LET'S TRY TO DEFINE DEVOPS

YOU BUILD IT, YOU RUN IT!

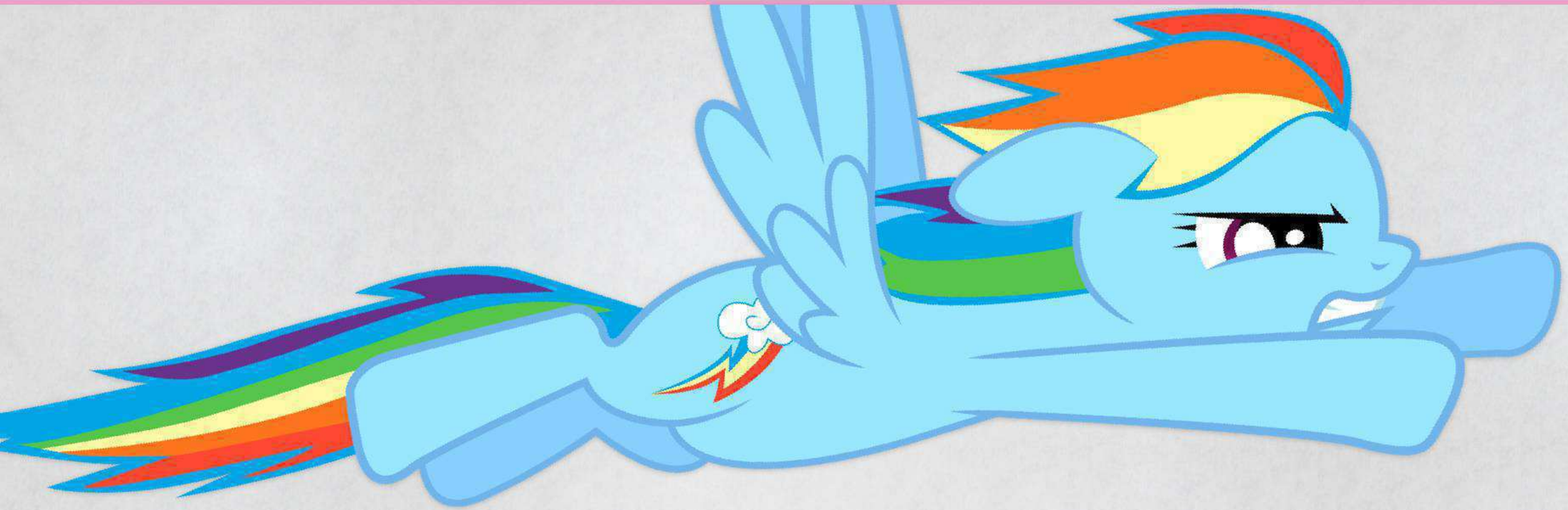
“The DevOps prime directive”



http://i.huffpost.com/gen/1143905/original.jpg

ANTI-PATTERNS

"You are doing it wrong!"



ANTI-ANTI-PATTERNS

"Ahhh... better!"

BECOME A DEVOPS

EXTEND YOUR DEV SKILLS

~~S.T.U.P.I.D.~~

S.O.L.I.D.

PATTERNS

- creational
- behavioral
- structural

TEST-DRIVEN-DEVELOPMENT

- tests first
- know “the circle”
- different tests

TEST-DRIVEN-DEVELOPMENT

- tests first
- know “the circle”
- different tests, are different

REFACTORING

- you must walk through hell
- tests, tests, tests (BDD, Integration tests)
- branch by abstraction

OPEN SOURCE

- working with upstream
- do not patch the framework
- join the community & gather credits

SOFTWARE ARCHITECTURE

- challenge: do it distributed
- SOA
- REST

KNOW THE PITFALLS

- wrong expectations
- “hipster” technologies
- 2nd system effect

GATHER OPS KNOWLEDGE

SOME HANDY SHELL KNOWLEDGE

- you should feel comfy in a terminal
- #protip: use a terminal in your daily work

UPDATE MANAGEMENT

- version pinning
- staging systems

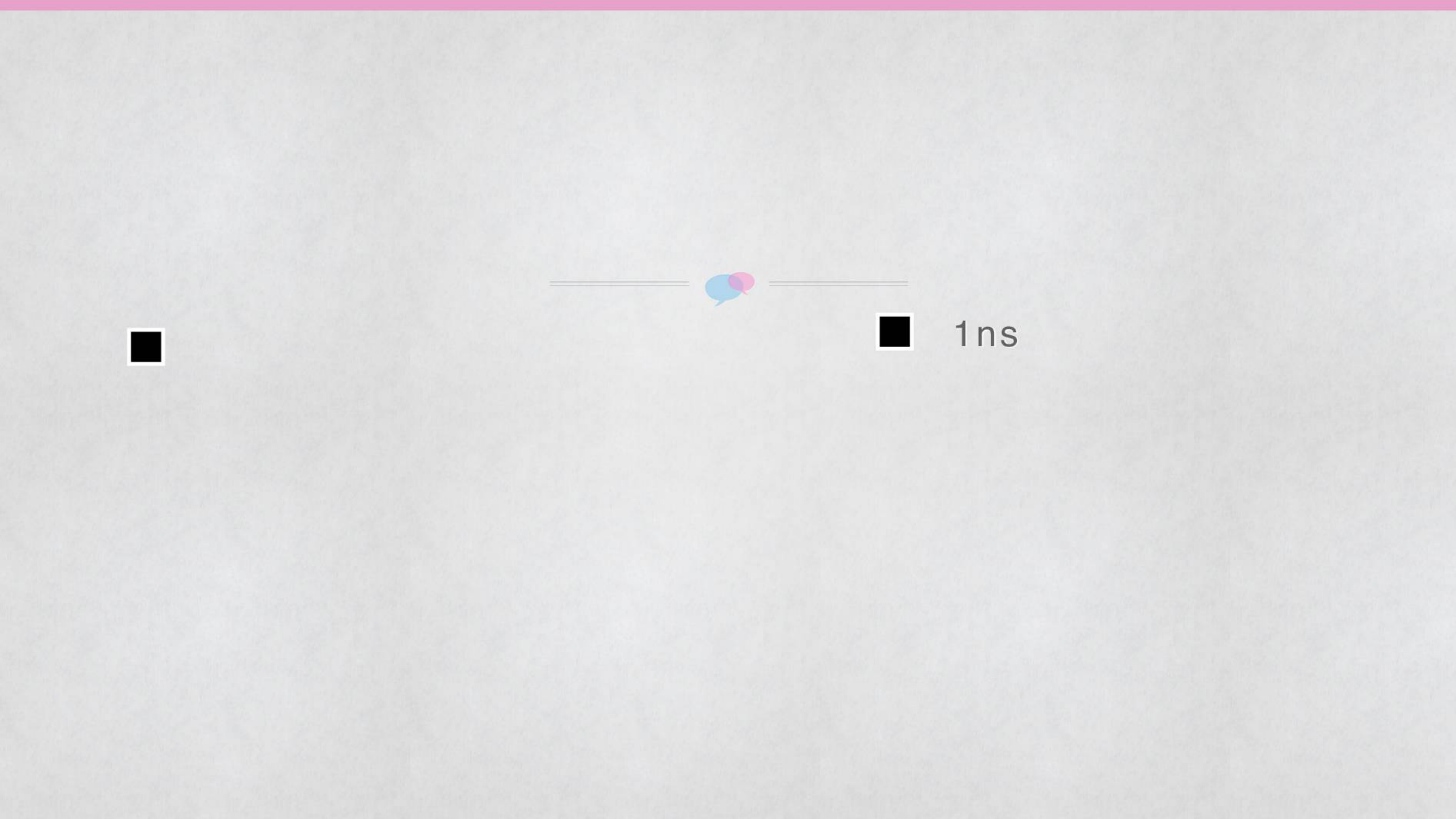
RISK MANAGEMENT

- ⚠ how often does a problem occur?
- ⚠ how much is the impact?
- ⚠ what is the mean time to repair?

PROTOCOLS OF THE WEB

- HTTP
- TCP / UDP
- IP

THE 4 BOTTLENECKS


1ns

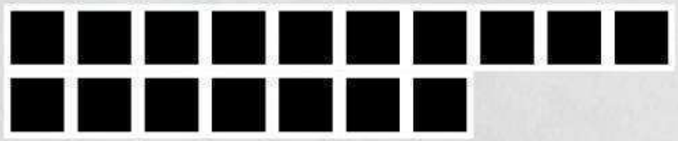
L1 CACHE REFERENCE

- 1ns

L2 CACHE REFERENCE

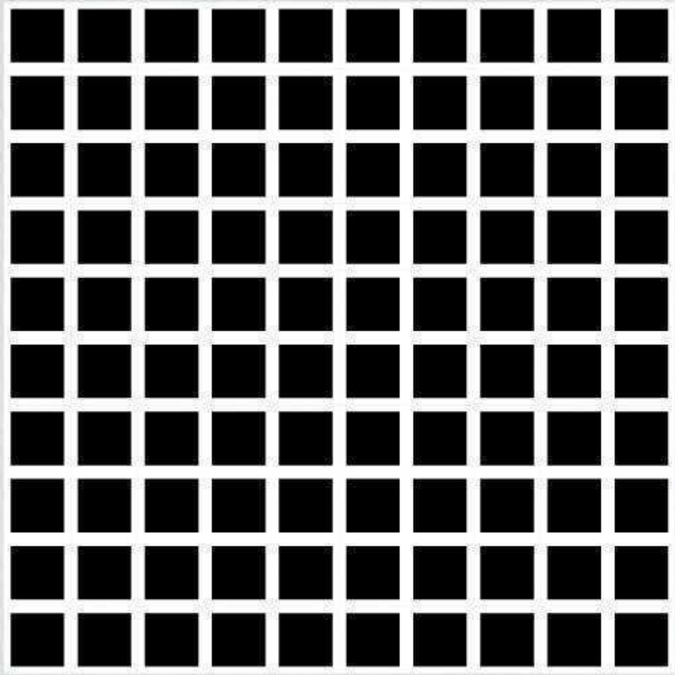
1ns

MUTEX LOCK/UNLOCK



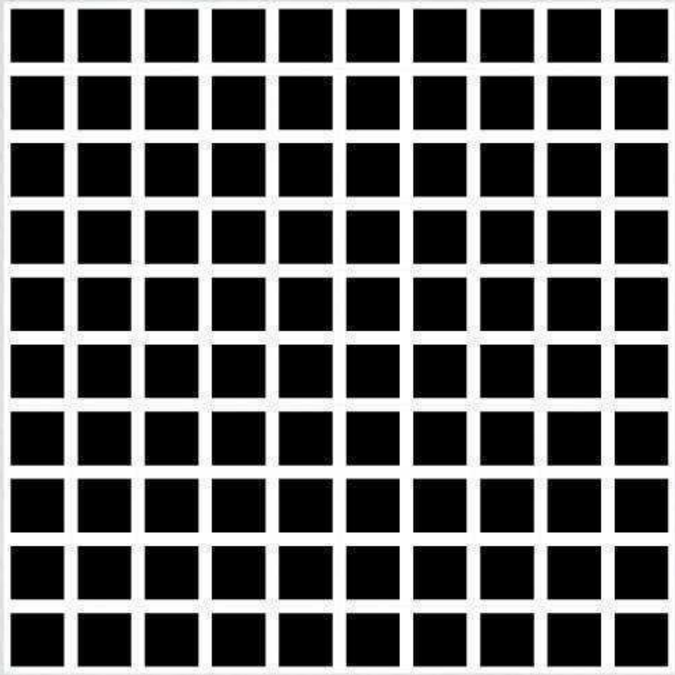
1ns

MAIN MEMORY REF.



1ns

MAIN MEMORY REF.



1ns

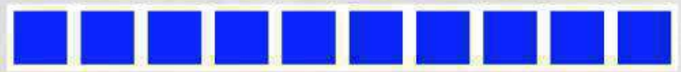
MAIN MEMORY REF.

- 1ns
- 100ns ~ 0.1µs

MAIN MEMORY REF.

- 1ns
- 100ns ~ 0.1µs

SEND 2KB OVER COMMODITY NETWORK



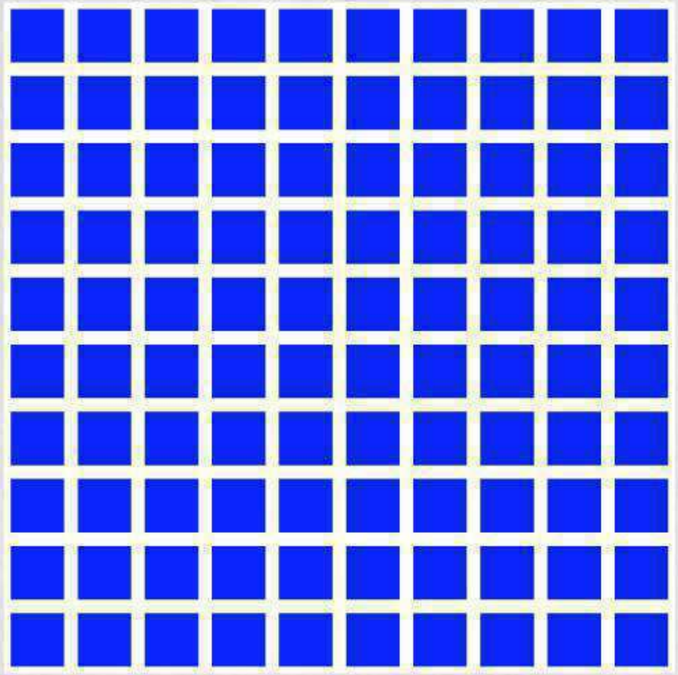
1ns

100ns ~ 0.1µs

COMPRESS 1KB/W ZIPPY

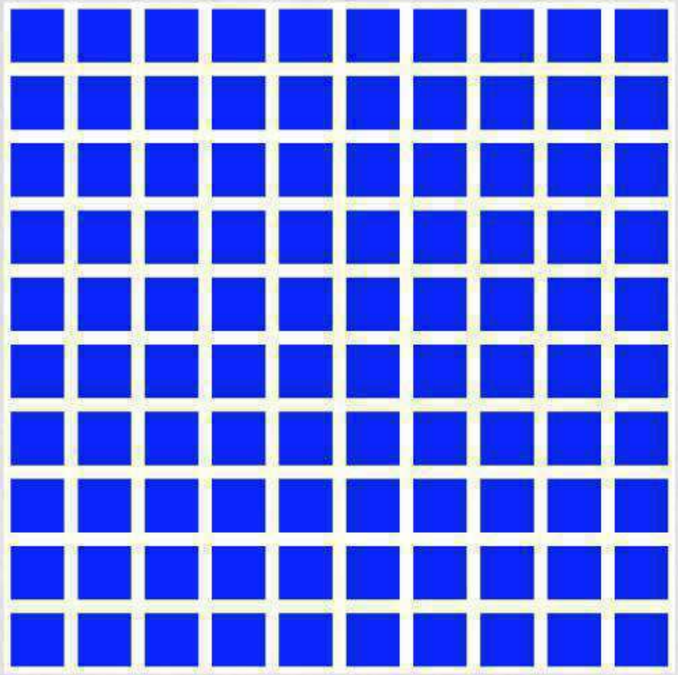
1ns

100ns ~ 0.1µs



1ns

100ns ~ 0.1µs



1ns

100ns ~ 0.1µs

1ns

100ns ~ 0.1µs

10,000ns ~ 10µs

1ns

100ns ~ 0.1µs

10,000ns ~ 10µs

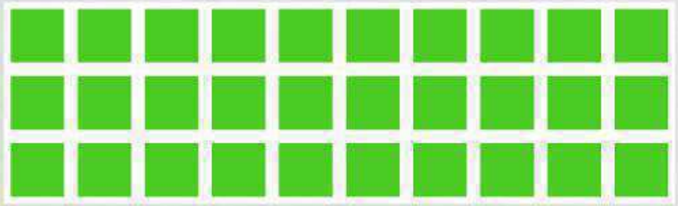
READ 1MB SEQ. FROM MEMORY

1ns

100ns ~ 0.1µs

10,000ns ~ 10µs

READ 1MB SEQ. FROM SSD

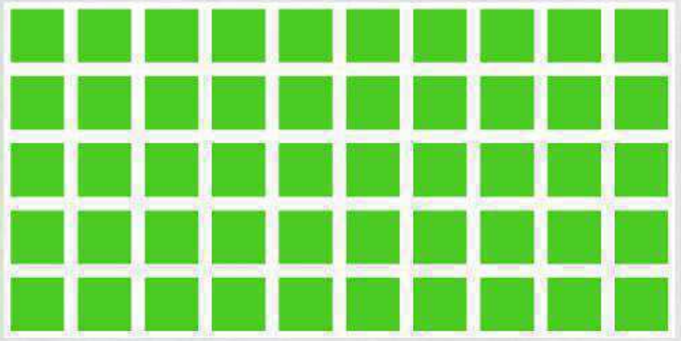


1ns

100ns ~ 0.1µs

10,000ns ~ 10µs

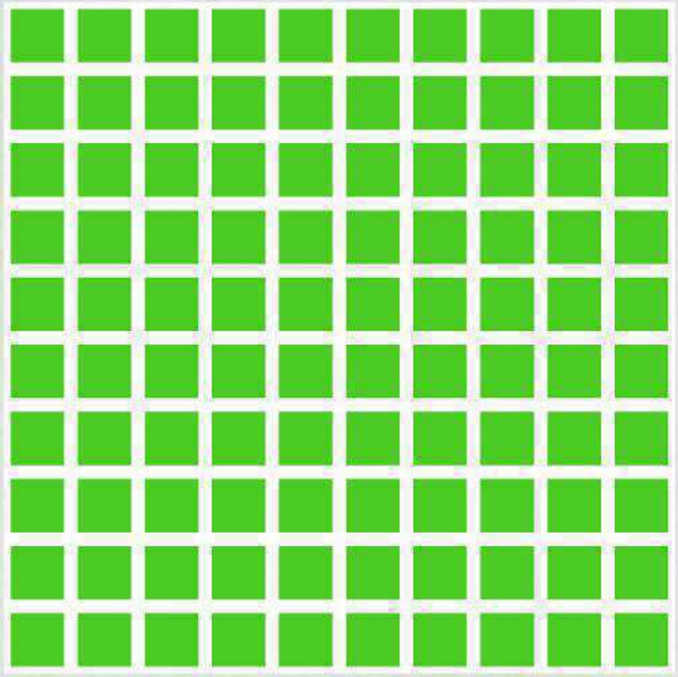
ROUND TRIP IN SAME DATACENTER



1ns

100ns ~ 0.1µs

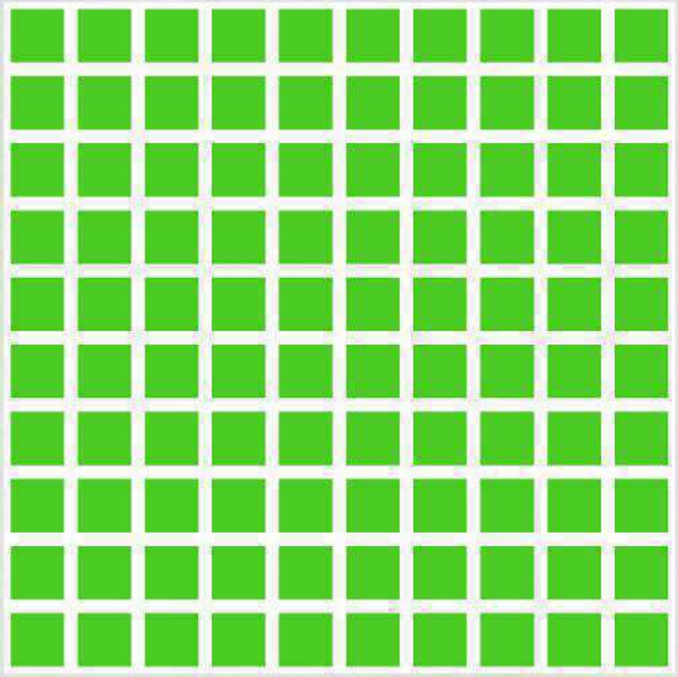
10,000ns ~ 10µs



1ns

100ns ~ 0.1µs

10,000ns ~ 10µs



1ns

100ns ~ 0.1µs

10,000ns ~ 10µs

1ns

100ns ~ 0.1µs

10,000ns ~ 10µs

1,000,000ns ~ 1ms

1ns

100ns ~ 0.1µs

10,000ns ~ 10µs

1,000,000ns ~ 1ms

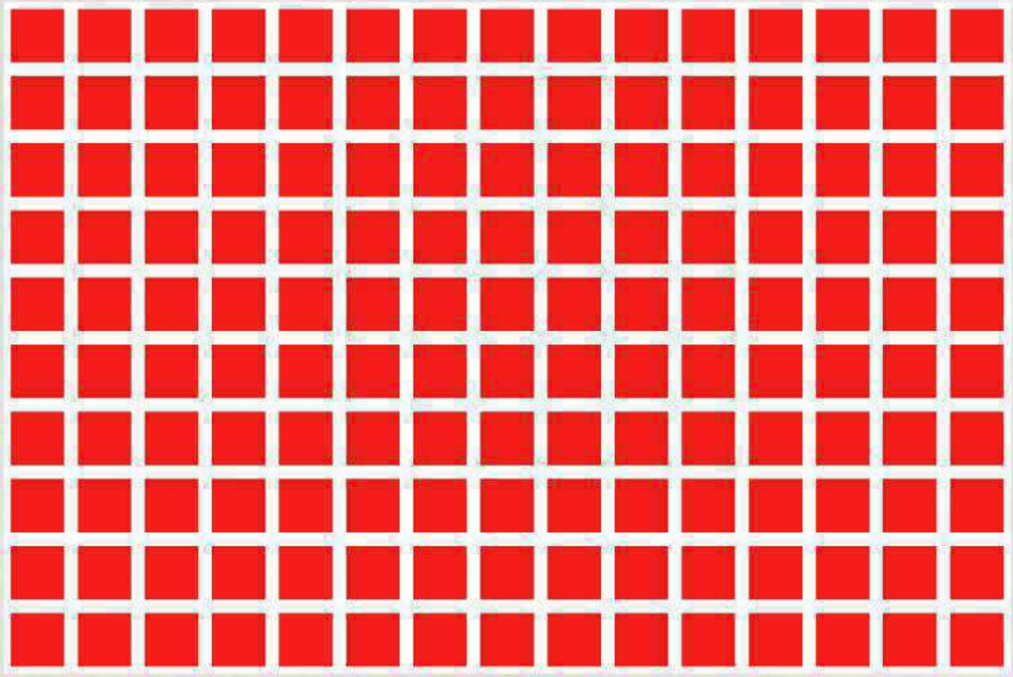
READ 1MB SEQ. FROM DISK

- 1ns
- 100ns ~ 0.1µs
- 10,000ns ~ 10µs
- 1,000,000ns ~ 1ms

DISK SEEK

- 1ns
- 100ns ~ 0.1µs
- 10,000ns ~ 10µs
- 1,000,000ns ~ 1ms

PACKET ROUNDTRIP CA TO NETHERLANDS

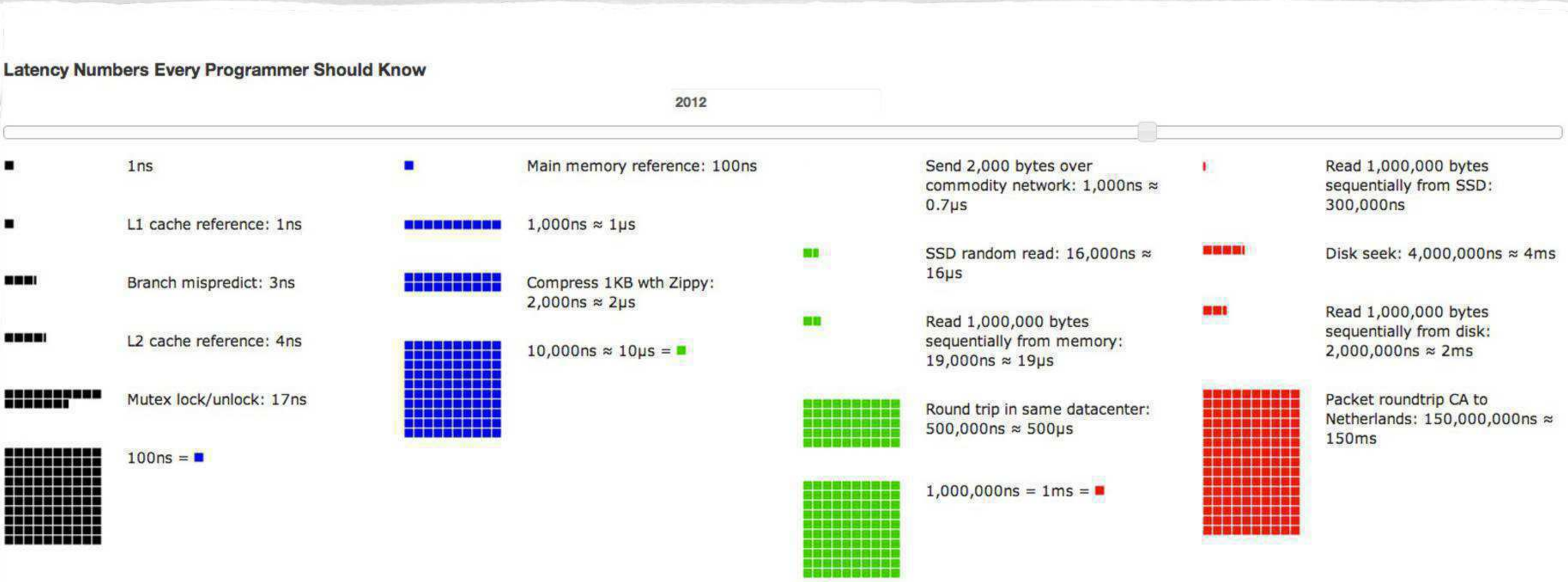


1ns

100ns ~ 0.1µs

10,000ns ~ 10µs

1,000,000ns ~ 1ms



http://www.eecs.berkeley.edu/~rcs/research/interactive_latency.html

INCIDENT MANAGEMENT

- what's the problem?
- what causes it?
- how to fix it?

BEING ON-CALL

- keep calm!
- important things first
- **f**irst **i**n, **f**irst **o**ut, but...

TOPICS YOU MIGHT CARE ABOUT

* AS A SERVICE

DEPLOYMENT

CONTINUOUS DELIVERY

Ship when it's done!

CONTINUOUS DEPLOYMENT

Shipin' all the time!

PULL DEPLOY

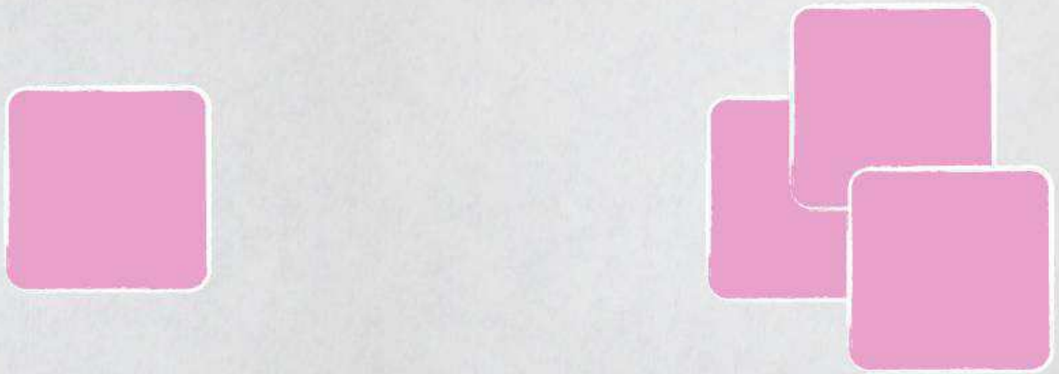
Stop pushing, start pulling!

STRATEGIES

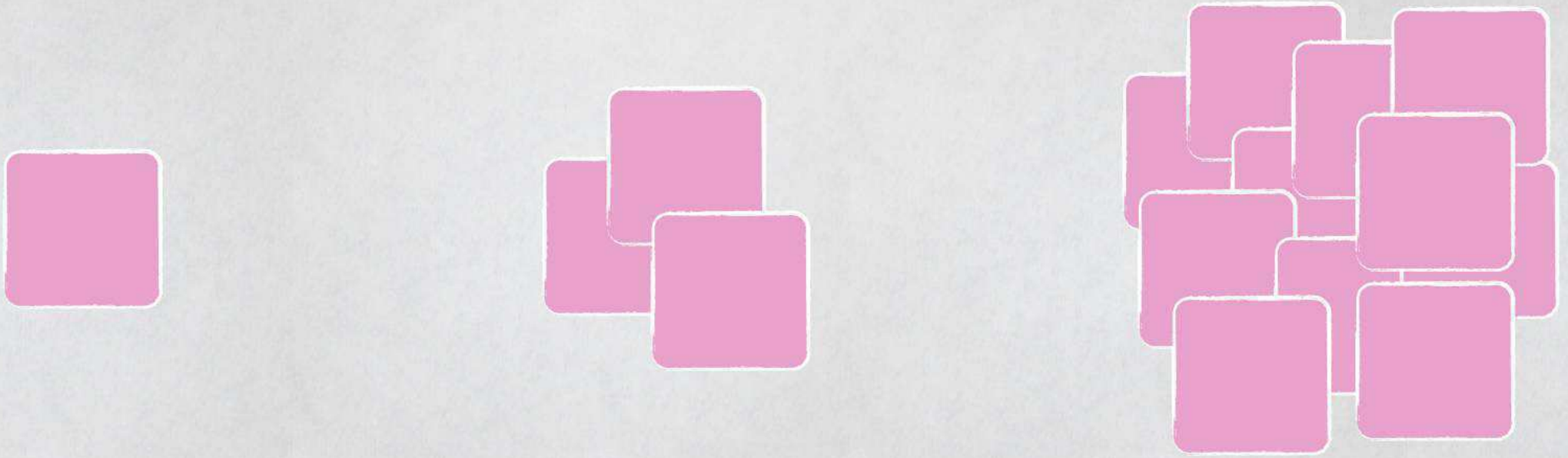
ONE, SOME, MANY

ONE, SOME, MANY

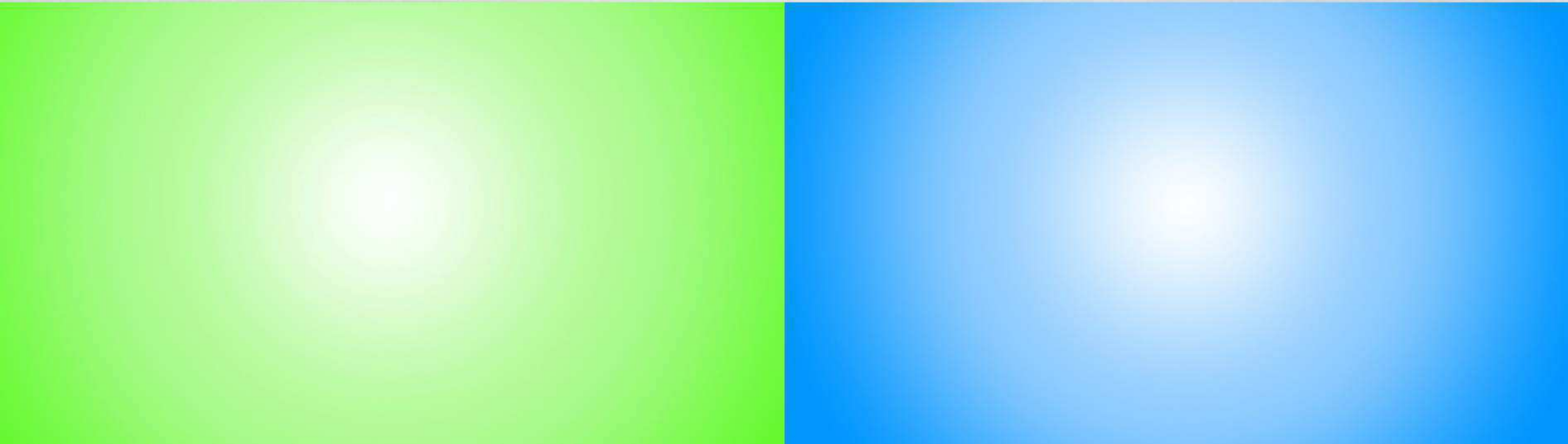
ONE, SOME, MANY



ONE, SOME, MANY



GREEN / BLUE



METRICS

SYSTEM VS. APPLICATION

WHAT TO MEASURE?

WHAT TO MEASURE?

- ✔ requests

WHAT TO MEASURE?

- ✔ requests
- ✔ querys

WHAT TO MEASURE?

- ✔ requests
- ✔ querys
- ✔ exceptions

WHAT TO MEASURE?

- ✔ requests
- ✔ querys
- ✔ exceptions
- ✔ connections

WHAT TO MEASURE?

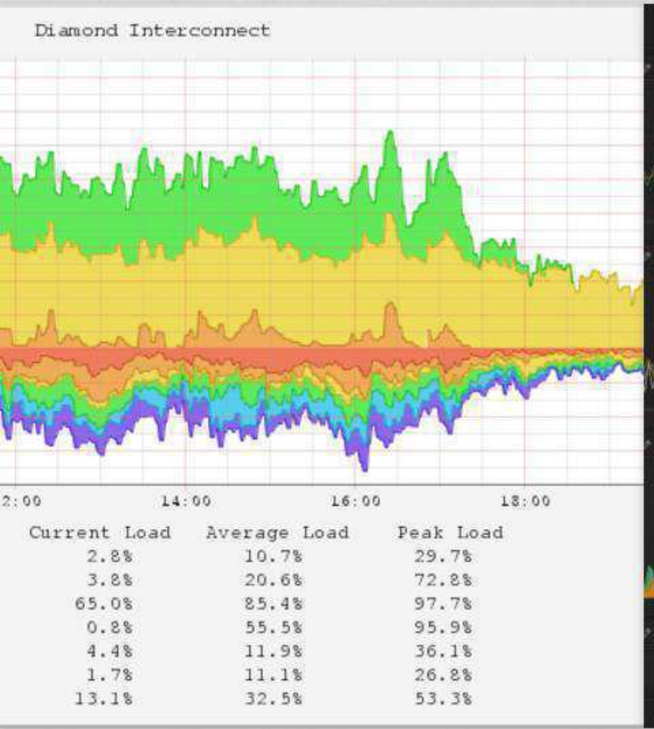
- requests
- querys
- exceptions
- connections
- user

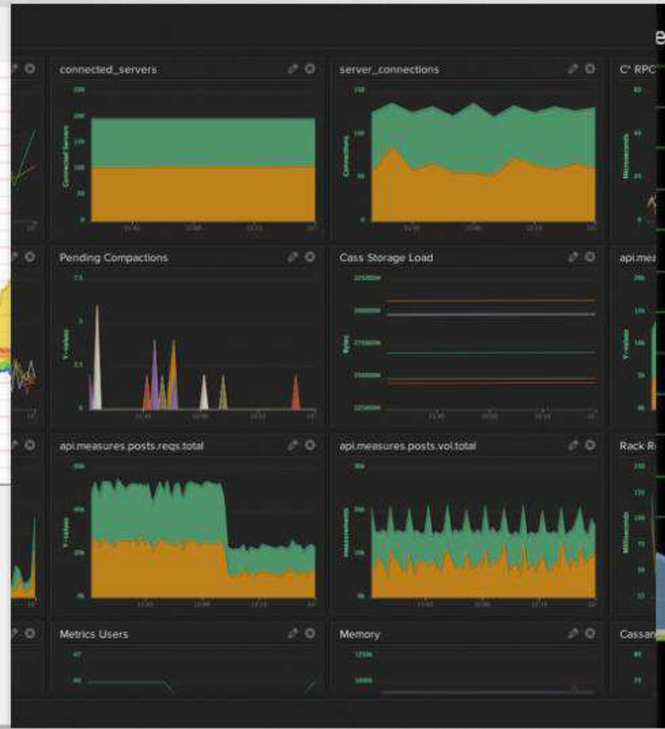
WHAT TO MEASURE?

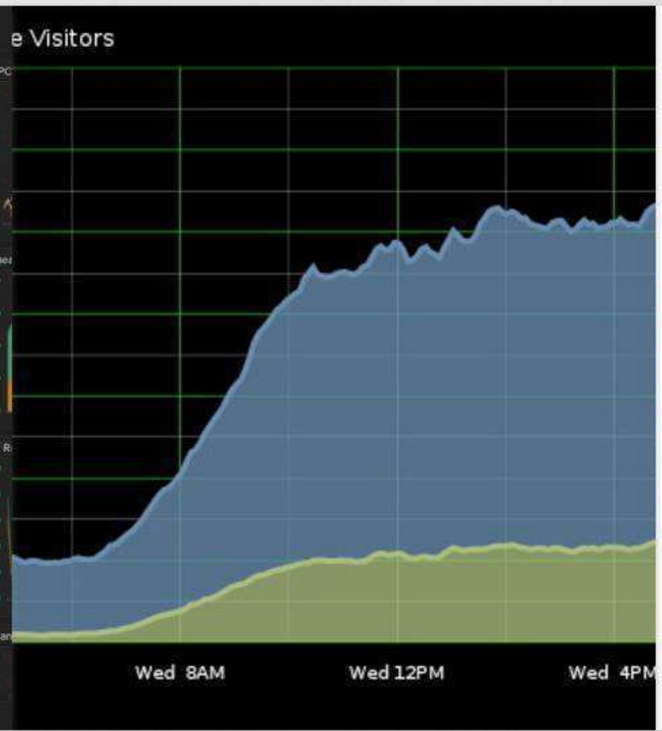
MEASURE WHATEVER MAKES FUCKING SENSE!

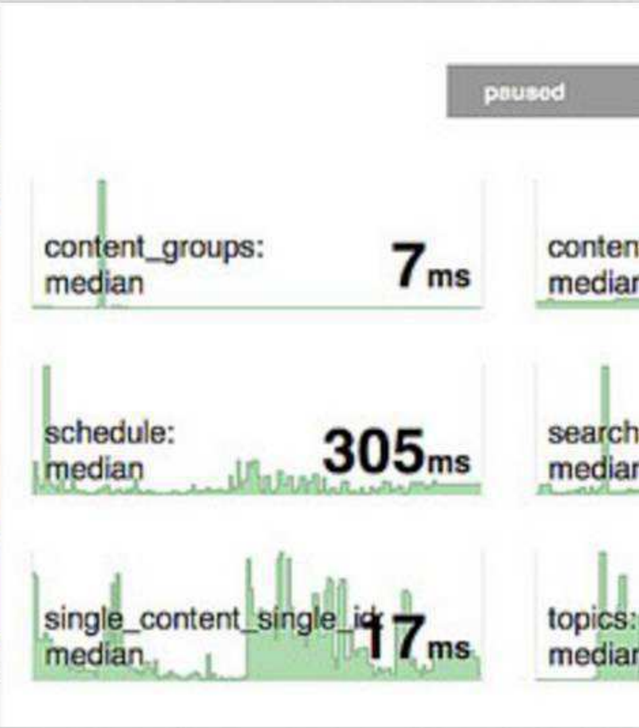

Level
E Level
rice USD
Low
Average
4JAN02

VISUALIZE IT!









VISUALIZE...

#MONITORINGLOVE

AUTOMATION

SCALE

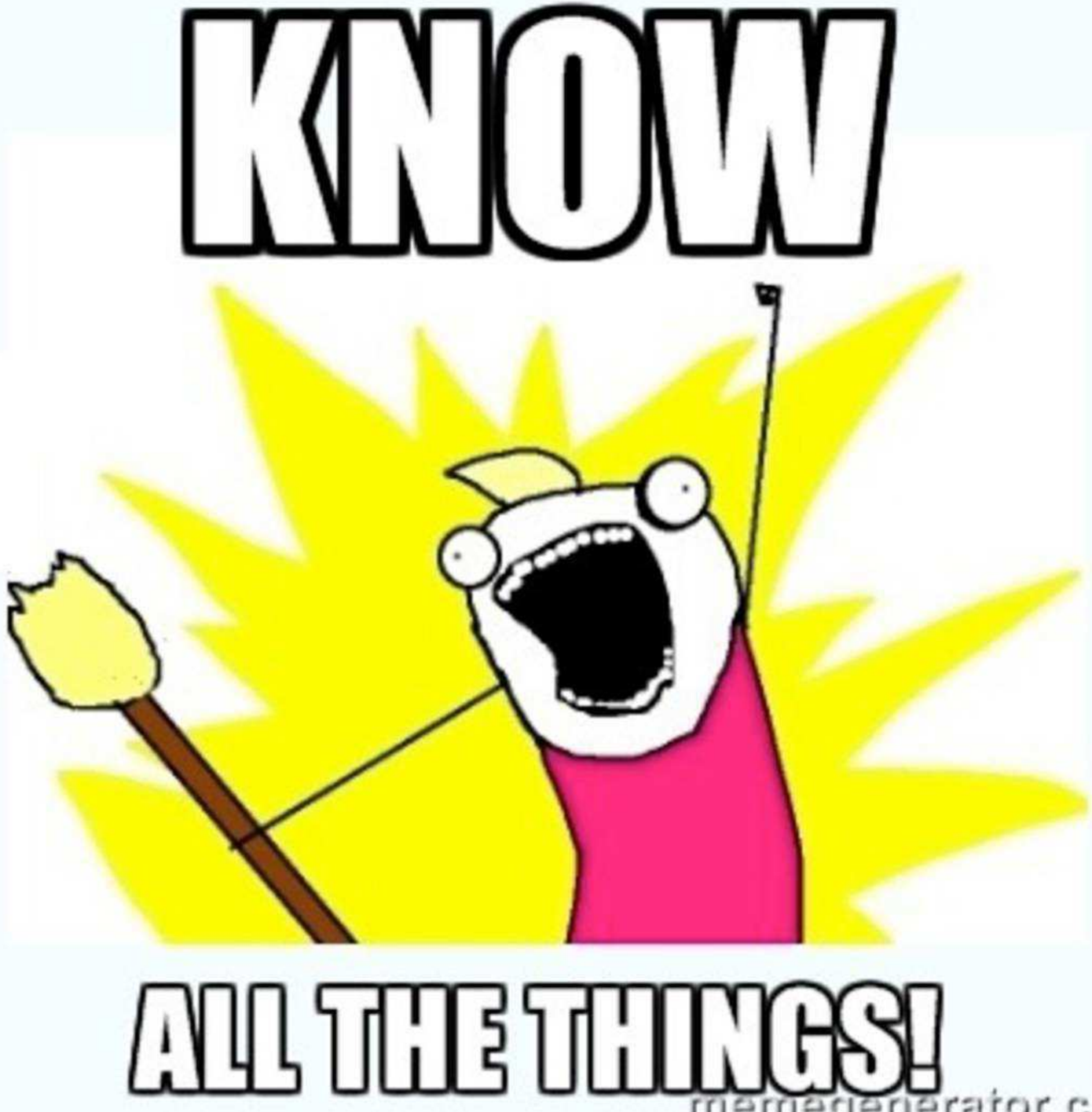
TOOLS LOVE

DATABASES

PROGRAMMING LANGUAGES

3RD-PARTY TOOLS

QUEUES


KNOW
ALL THE THINGS!
memegenerator.co

FAILURE IS GOOD

BE AGILE

FEEDBACK

METHODS

KEEP LEARNING

THANK YOU!

 @CodeStars

Sources:

- http://nikic.github.io/2011/12/27/Dont-be-STUPID-GRASP-SOLID.html
- http://en.wikipedia.org/wiki/SOLID_(object-oriented_design)
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- http://en.wikipedia.org/wiki/Behavioral_pattern
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- http://s3.amazonaws.com/crunchbase_prod_assets/assets/images/original/0018/2843/182843v2.png
- http://2.bp.blogspot.com/-t2FW5rx_yn0/TxVwhmqAXgI/AAAAAAAAA7s/DSdFmMZ5ecM/s1600/trading-floor.jpg
- http://en.wikipedia.org/wiki/Mutual_exclusion

Thanks to all the people helped me so much!

Elena♡ Fridel
Ingo Spring
Nils Jimdo!

August 11th – 13th 2014

Same Place, Same Time